

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Andre Szuwalski (35701) on 1/27/09.

The application has been amended as follows:

1. (Currently Amended) A method of analysis of an array image including one or more luminous spots on a background, comprising:

operating an array localization system implementing morphological filtering by:

determining a shape and location of each spot on the array image;

generating a binary map of pixels defining a boundary of each spot on the background;

isolating each spot from the background by an extraction operation using said binary map;

examining each spot by a segmentation operation to identify pixels belonging to a same cluster according to a preestablished criterion; and

for each spot, defining relative characteristic parameters and quality indexes determined in function of gray levels of pixels of the spot;

wherein generating said binary map comprises ~~is generated with a technique of morphological filtering comprising:~~

filtering the array image with at least a morphological filter generating only a single corresponding marker image of the background;

determining a background level by carrying out a reconstruction operation on said single corresponding marker image to generate a corresponding reconstructed image of the background; ~~and~~

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generating a filtered image from which the luminosity of the background is removed by performing a top-hat operation on said reconstructed background image and the array image; and

performing a thresholding operation on said filtered image of the background luminosity.

13. (Currently Amended) A device for the analysis of array images comprising:
an array localization system having the architecture of a cellular neural network for processing the pixels of luminous spots and implementing ~~the following operations~~ morphological filtering by:

determining a shape and location of each spot on the array image;

generating a binary map of pixels defining a boundary of each spot on the dark background;

isolating each spot from the background by an extraction operation using said binary map;

examining each spot by a segmentation operation to identify pixels belonging to a same cluster according to a preestablished criterion; and

for each spot, defining relative characteristic parameters and quality indexes;

wherein generating said binary map comprises ~~is generated with a technique of morphological filtering comprising:~~

i) filtering the array image with at least a morphological filter generating only a single corresponding marker image of the background;

ii) determining a background level by carrying out a reconstruction operation on said single corresponding marker image to generate a corresponding reconstructed image of the background;

iii) generating a filtered image from which the luminosity of the background is removed by performing a top-hat operation on said reconstructed background image and the array image; and

iv) performing a thresholding operation on said filtered image of the background luminosity.

Claims 21-22. (Canceled).

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

Independent claims 1 and 13 each disclose a method of analyzing an array image by filtering the image and using only a single marker image.

The above features, as explicitly recited, and in combination with the other elements of the claim are neither disclosed nor suggested by the nearest prior art of the record.

Prior arts Siddiqui, Bozinov, Alessi, and Gardes do not disclose using only a single marker image.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HADI AKHAVANNIK whose telephone number is (571)272-8622. The examiner can normally be reached on 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jingge Wu/

Supervisory Patent Examiner, Art Unit 2624

HA

1/28/09